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THE CRANE-FLIES OF NORTH AMERICA.*—Another of the useful entomological works issued by the Smithsonian Institution, is Baron Osten Sacken's elaborate Monograph of the North American Tipulidæ (or Crane-flies), with short palpi, comprising the smaller species of the family; the true Tipulids comprising the well-known crane-flies so abundant in our gardens and fields. This work, destined, we judge, to be a classic in American entomological literature, is useful not only as containing descriptions of all our known crane-flies, but as a model of the mode of monographing a group of animals; and for patient research, thorough treatment and the new mode of illustration (heliographs by Egloffstein's patent) is one of the most important works on insects published during the past year in any language. It will be noted at greater length in the "Record of American Entomology" soon to be published.

REVISION OF THE LARGE, STYLATED, FOSSORIAL CRICKETS.—In the first number of the *Memoirs of the Peabody Academy of Science*,† Mr. S. H. Scudder has brought under review all the species of the palmated crickets known to him, with the exception of the smaller forms. The descriptions of the species are carefully prepared, and each description is accompanied with a full table of measurements of several specimens. The plate contains a full-sized figure of *Gryllotalpa australis*, from New Holland, a species never before figured; and thirty-seven details of forelegs and wing-covers of the different species.

The author has prefaced his own descriptions with a full list of the various writers on the group, with remarks on the species mentioned by each. The Mole Crickets which are furnished with but two dactyls on the fore tibia, he places together as forming a new genus, to which he gives the name of *Scapteriscus*, while for those having four dactyls, he retains the old generic name of *Gryllotalpa*.

THE NOXIOUS INSECTS OF MISSOURI.‡—This first report of the State Entomologist is exceedingly creditable both to the author and the State which has so liberally fostered the study of economical entomology. Farmers and gardeners throughout the country will find it a very readable book, and entomologists will glean many new facts from its pages. The chapter on Cutworms, Bark-lice, the Plum-curculio, the Seventeen-year Cicada, the Potato-beetles and the Bot-fly of the sheep, are of especial interest.

We learn that the State of Missouri has acknowledged the value of the study of practical entomology, by the appropriation of \$3000 to pay the salary of the Entomologist for the present year. In such a liberal provi-

* Monographs of the Diptera of North America, Part. IV. (Smithsonian Miscellaneous Collections, 219). Prepared for the Smithsonian Institution by Baron Osten Sacken. Washington, Jan., 1869. 8vo, pp. 345, 4 plates.

† Imperial 8vo, 32 pages and steel plate; tinted paper. Salem: Essex Institute Press. March, 1869. Price \$1.25.

‡ First Annual Report on the Noxious, Beneficial and other Insects of the State of Missouri. By Charles V. Riley, State Entomologist. Jefferson City, 1869. 8vo, pp. 190, with two colored lithographic plates and ninety-eight cuts, \$2.00; with plain plates \$1.00.

sion for the diffusion of entomological knowledge, Missouri not only leads all the States in the Union, but shows that she regards it as an economical measure to induce every farmer to be his own entomologist.

GUIDE TO THE STUDY OF INSECTS.*—The sixth number of this work is out, and contains accounts (not before published) of the transformations of twelve moths injurious to fruits, etc., mostly illustrated, besides notices of the Clothes' Moth, Carpet Moth, Grain Moth, the Angoumois Grain Moth, etc., with full directions for collecting the smaller moths. The chapter on Diptera is begun, and gives accounts of the Mosquito, the Wheat Midge, Hessian Fly and Gall Flies. The number contains a steel plate figuring forty different objects, and fifty-seven cuts in the text. We should here state that the *Penthina vitivorana* feeds exclusively on the grape seed; it rolls up the leaf when about to transform, but does not feed upon it. Lines eight and nine from the bottom, on page 336, may therefore be deleted.

LE NATURALISTE CANADIEN.†—A capital journal for the popularization of natural history among the French Canadians. It is edited with much spirit, and we trust that its success is already assured.

TERATOLOGY.—M. C. Dareste has given us in the "Annales des Sciences Naturelles" a résumé of his remarkable discoveries, from which we translate a few paragraphs as nearly word for word as possible:

"I at first sought to obtain monstrosities, as Geoffroy Saint-Hilaire had done, by submitting eggs placed vertically or partially varnished to artificial incubation." "Later I recognized the fact that these two causes which I had set in operation were not the only ones which acted upon the embryo, and that it was necessary also to take account of another cause to which I had not at first attended; that is to say, of the manner in which the eggs were heated in one of the artificial 'couvenses,' which have served for my experiments. I have therefore, provisionally, abandoned the use of varnish, and the vertical position, in order to employ only a single cause of modification, the use of which I could perfectly control." When the egg is covered with varnish or other glazing, which partially excludes the air, the embryo can develop, but finally perishes when the allantois is formed "when the needs of respiration imperiously demand greater quantity of air." "I arrive now at the results which depend upon the mode of warming the eggs in one of my artificial brooding hens (couvenses). In this apparatus the contact of the egg with the source of heat takes place by only one point. Now if in place of directly warming the culminating point of the egg, the point which the cicatrix always occupies at the end of the development, a point of the egg situated at a certain distance from the preceding one be heated, the development is

* Published at Salem, Mass., by A. S. Packard, jr. Fifty cents a part. To be published in ten parts.

† Le Naturaliste Canadienne. Bulletin des Recherches, Observations et Découvertes se rapportant à l'histoire naturelle du Canada. Tom. I, nos. 1-4, 1869. Quebec. 8vo, \$2.00, gold, with illustrations.